M·A·P·S Digest

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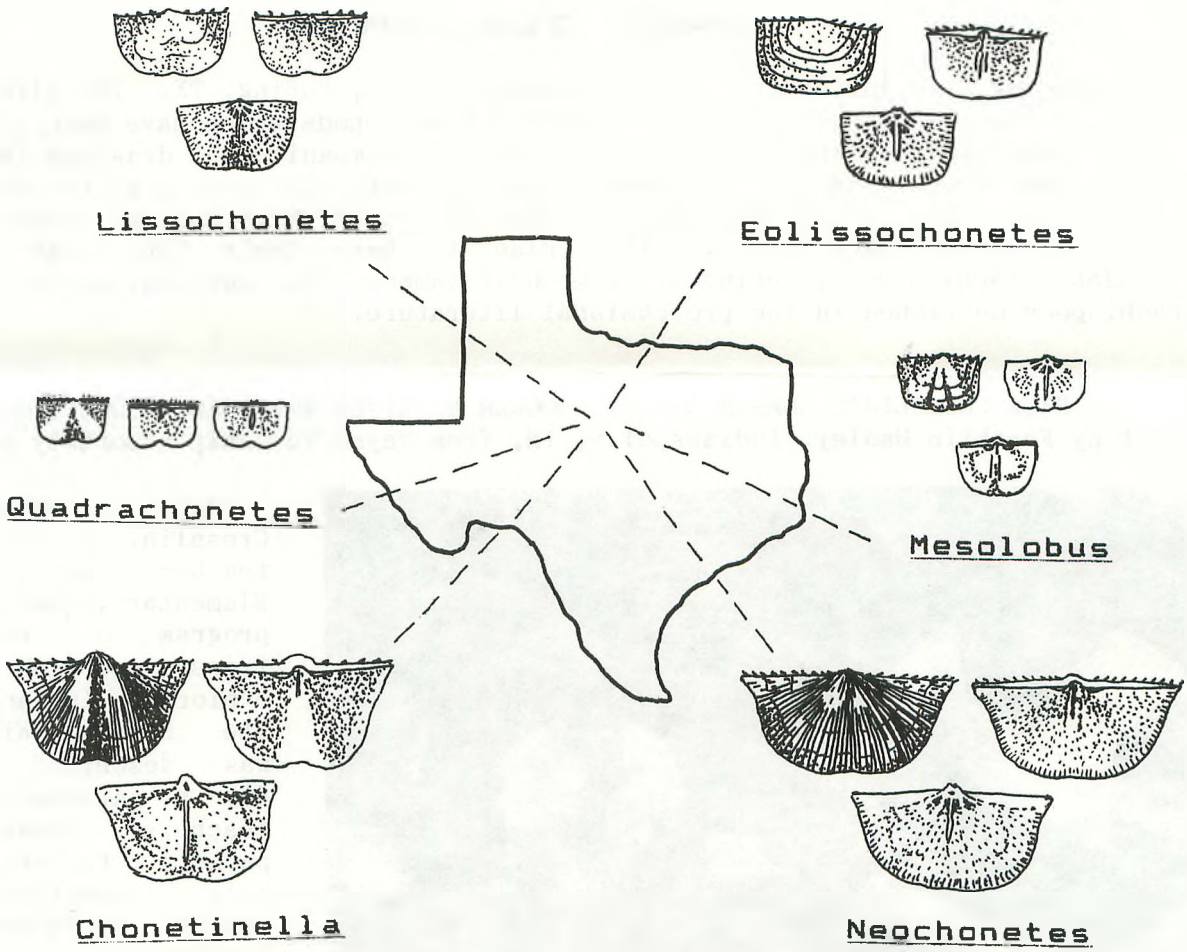

TEXAS PENNSYLVANIAN CHONETIDS

MARK YOUR CALENDARS

2 DEC MAPS MEETING at Fryxell Museum, Augustana College, Rock Island, IL

1:00 Board Meeting
2:00 MAPS Meeting
Orrin Plocher, U. of Iowa graduate student, will be speaking about "Depositional Environments of Ancient Limestones" - identifying limestones by looking at the microscopic fossil grains.

13 JAN MAPS MEETING at Fryxell Museum, Augustana College, Rock Island, IL

1:00 Board Meeting
2:00 MAPS Meeting

1990 MAPS National Fossil Exposition XII - Leaves and Grasses

April 20-22, Macomb, IL

ABOUT THE COVER

The cover drawing was provided by Tom and Rosemary Akers, Spring, TX. The illustrations are representatives of the six genera of chonetid brachiopods which have been identified from the Texas Pennsylvanian Period. The article which accompanied the drawings (see pages 3-4) comes from the Brachiopod Study Group of the Paleontology Section of the Houston Gem and Mineral Society. The group consists of Dorothy Hall, Mary Morton, Schunke Lynch, John Herbert and Tom and Mary Akers. They plan to have their fourth publication, *Texas Pennsylvanian Brachiopods*, in print sometime next summer. The publication will cover all of such brachiopods mentioned in the professional literature.

RICK CROSSLIN'S SUMMER SAFARI PROGRAM RECEIVES NATIONAL RECOGNITION

sent by Franklin Hadley, Indianapolis, IN, from Wayne Township's monthly bulletin

Examining fossils they collected from a road cut near Mooresville are Stephanie Patton, Rick Crosslin, Lori Nichols and Vickie Turner.

(MAPS member) Rick Crosslin, fourth grade teacher at Chapel Glen Elementary, has developed a program of ten day-long trips and one over-night exploring Indiana's ecology. The Summer Safari Program was described in **Learning 89**, a national magazine for teachers. Students explore parks, forests, museums, rock quarries, lakes, swamps, caves and farms in a hands-on learning experience.

(Rick) was Indiana's alternate for NASA's Teacher in Space Program...

(Franklin Hadley says he and his wife took Rick to some of the sites that were later visited by the summer Safari, and Franklin even went on two of the trips as "advisor.")

EXPO XII--LEAVES & GRASSES

Once again it's time to start making your plans for Expo, April 20-22 at Macomb, IL. The theme for this year is "Leaves and Grasses," and this year's *Digest* will live up to those of past years. Remember to plan to bring an exhibit, especially if you have one related to leaves and/or grasses. Plans also call for a workshop at Expo. Details will follow in January.

Registrations information for tables and available accommodations, as well as directions to Macomb, will appear in the January *Digest*.

ARE YOUR DUES DUE?

Are your dues due? You can tell by checking your mailing label. The top line gives the expiration date in the form of year followed by month--89/12 means 1989/December. All dues run through the end of the month in which they expire.

We do not send notices but will let you know if you are overdue by putting a sticker on your *Digest*. We carry overdues for two months before dropping them from our mailing list.

Please use the form found on the back page of your November *Digest* for renewal. It really simplifies entering the update into the computer. If the form is not available, please include your due date and your name **exactly** as it appears on your mailing label.

Dues are $10 per U.S./Canadian household per year. Overseas members may choose the $10 fee to receive the *Digest* by surface mail or a $25 fee to receive the *Digest* by air mail. Library/Institution fee is $25.

Make checks payable to MAPS and mail to:

Sharon Sonnleitner, Treas.
4800 Sunset Dr. SW
Cedar Rapids, IA 52404

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CORRECTION

My apologies to Louis H. Taylor for all the typos in his letter which I retyped for the November *Digest*. I forgot to proofread it. The letter he sent did not have all the errors.

MAPS MEMBERS ATTEND GSA MEETING

Karl Stuekerjuergen and Doug DeRosear were official MAPS representatives at the GSA meeting held November 6-9 in St. Louis, MO. Karl said the meeting went quite well, and MAPS received a lot of exposure to the professional community at the meeting.

Karl also mentioned that MAPS member Ernie Hammons received the Strimple Award at the meeting. Ernest and Onsby Hammons were MAPS nominees for the Award. More about that in January.

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MAPS BADGES AVAILABLE

MAPS name badges are available once again. The badge has a blue background with a white logo and your name, city, and state.

To order a badge send the NAME, CITY, and STATE that you want to appear on your badge along with your complete address and a check for $5.25 (includes postage) to:

R.V. Printery
1320 5 Ave.
Moline, IL 61265

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TAPE PROGRAMS AVAILABLE

Gil Norris has put together five VHS tape programs which were first released at EXPO X and are still available by mail order. Each program comes with a study guide. The programs available are:

Arthropods & Crustaceans.....34 min
Brachiopods, Bryozoans, Sponges...44 min
Cephalopods & Mollusks.....55 min
Echinoids.....48 min
The Fossil Story & WY Stone Fish..48 min
(designed for 6th graders)

The programs may be ordered as stated on separate tapes; **or** any combination of programs up to a total of 2 hours long may be ordered on one tape. The price is $20 per program for each program ordered on a **separate** tape. If you want **more than one** program on **one** tape, the price is $20 for the first program and $15 for each additional program on that tape. Add $2 per tape for postage. Make checks payable to MAPS and send to:

Gil Norris
2623 34th Avenue Ct.
Rock Island, IL 61201

PLEASE USE THE ORDER FORM (or a reasonable facsimile of it) FOUND ON PAGE 8.

TEXAS PENNSYLVANIAN CHONETIDS

from: the Brachiopod Study Group of the Paleontology Section of the Houston Gem & Mineral Society
submitted by: Tom and Rosemary Akers, Spring, TX

Hunting in the Texas Pennsylvanian is a rewarding experience. One of our club members called a road bank locality full of "Breakfast Food Mix," and as this suggests, the fossils are a profusion of crinoid cheerios, stick bryozoa, a wide variety of brachiopods and many other invertebrate fossils such as gastropods, sponges, trilobites, corals and amminoids. One of the small shells occurring in this "Mix" is the chonetid. This small shell existed in the Paleozoic seas from the Silurian Period through the upper Permian Period. The profusion of chonetids in our exposures of the Pennsylvanian Period suggests a healthy Texas population.

Chonetids are prized for their excellent internal and external preservation. Valves are often found separated, and the internal features are available in species identification. This beautiful group of little shells comprise an important part of Texas brachiopods. An appreciation of their characteristics will help you place them into the proper genera.

Chometids are articulate brachiopods belonging to the Superfamily CHONETACEA. They are concavo-convex and have hinge spines. These spines are hollow and can be curved at the end. They seem to be adapted for attachment or perhaps anchoring in the sand. In addition to the hinge spines many shells have tiny thread-like spines or spinules over the surface. Another theory advanced characterizes the chonetids as active swimmers, like the pectins of today. The light, thin shell would lend itself well to floatation, and flapping the valves open and closed would provide the propulsion.

Texas chonetids provide a variety of genera which can usually be separated by external shell appearance. Six genera and twenty-eight species of chonetids have been identified from the Texas Pennsylvanian Period. A total of sixty-six brachiopod genera and one hundred sixty-three species has been identified from the Texas Pennsylvanian.

Each of the six Texas chonetid genera is illustrated on the cover. The external pedicle valve, internal pedicle valve and internal brachial valve are pictured. A brief description of each chonetid general is given below.

Neochonetes - This large chonetid is capillate, i.e. having many radial ridges, and had a world-wide distribution. The shells are plano- or concavo-convex. The hinge is usually the widest part, and it has a spine row with a low angle to the hinge line. A very shallow median sulcus is another typical feature. This genus is found in the Cisco, Canyon, Strawn and Marble Falls Groups and is represented in Texas by eight species.

Chonetinella - This is another radially striate genus. The deep median sulcus in the pedicle valve and corresponding fold in the brachial valve are major features. The spines along the hinge have a very low angle. Large ears and concavo-convex shape are typical. They are found in the Cisco, Canyon, Strawn and Marble Falls Groups and are also represented in Texas by eight species.

Mesolobus - *Mesolobus* is probably the most distinctive chonetid. It is usually smooth but shows a tendency to radial costae. The primary feature is a fold within the pedicle valve sulcus and a sulcus within brachial valve fold. The hinge spines extend at a forty degree angle. *Mesolobus* is found in the Strawn Group, and six Texas species have been identified.

Lissochonetes - This genus is slightly concavo-convex, smooth and has hinge spines at a forty degree angle. Only a weak sulcus occupies the middle of the pedicle valve and a weak fold in the brachial valve. It has been found in the Cisco, Canyon and Smithwick Groups and has three Texas species.

Quadrochonetes - These small fossils are smooth with no radial constae. They have a

deep pedicle valve sulcus and brachial valve fold. Spines found on the hinge lie at a seventy degree angle. Two Texas species are found in the Cisco Group.

Eolissochonetes - *Eolissochonetes* is a smaller genus than *Lissochonetes* and has spines at a thirty-seven degree angle tothe hinge. It is most likely an intermediate stage between *Mesolobus* and *Lissochonetes*. Shells are smooth, and growth lines are the only ornamentation. Only one Texas species has been found, and it is from the Smithwick Group.

References:

King, R. H. 1938. New CHONETIDAE and PRODUCTIDAE from Pennsylvanian and Permian Strata of North-Central Texas: J. Paleo. v. 12, #3, pp. 257-279, pls. 36-39.

Moore, R. C. (Ed.) 1965. Treatise on Invertebrate Paleontology, Part H - Brachiopoda, v. 1 and 2, 927 pgs, illus.

Muir-Wood, H. M. 1962. On the Morphology and Classification of the Brachiopod Suborder CHONETOIDEA: Brit. Mus. (Nat. Hist.) Mon., 132 pgs, 16 pls, 24 figs.

Plummer, F. B. 1943 (1950). The Carboniferous Rocks of the Llano Region of Central Texas: Univ. Tex. Pub. No. 4329, 170 pgs.

Plummer, F. B. and Moore, R. C. 1921. Stratigraphy of the Pennsylvanian Formations of North Central Texas: Univ. Tex. Bull. No. 2132, 237 pgs.

LABELS: TRANSMITTING INFORMATION FOR YEARS TO COME

by Alan Goldstein
Curator of Science, Museum of History & Science, 626 West Main Street, Louisville, KY 40202

Fossil collectors should realize the importance of labelling. Consider the following scenario: You collect a fossil (it could be a trilobite from a local quarry) which may or may not have a "dollar value." It may or may not be unusual, out of place or rare. If you labelled your find, the scientific value may be retained long after the collector has retired from the hobby/profession.

What makes a label so important? A label transmits information--what the object is, where it came from or was collected, the geologic period, etc. The "et cetera" is useful additional information--formational name, notes about the environment from which the fossil was deposited (i.e. bioherm) or collected, composition (i.e. silicified, aragonite, etc.), the layer it was found (if in situ, or if was in float), how it was identified, and (if you really want to get detailed) the date it was collected. The amount of information beyond the basics depends on the size of the label you choose to use. Since microfossils, for example, are not displayed in the same manner larger fossil specimens are shown, labels may be arranged differently. No matter the size of the fossil, information should be on accompanying label. The type of display you choose to make will affect the style of label you decide to use. This is a personal choice, so I will not delve into it in more detail other than to say labels are meant to be read; therefore, the type or writing style should be large (especially if the lighting is not ideal) and not fancy, which makes it hard to read.

Another factor in labelling is where and how the object is displayed. A label of an object on display should only mention the most basic information; otherwise the label might make the display look cluttered. Often the story of how a specimen was obtained should be retained for the future. Any specimen with a story is surely more valuable.

In storage fossil labels are either loose (under the specimen) or attached to the box that the specimen rests in. Labels provide a back-up to a catalogue. If you do not have time to immediately catalogue each

entry, a label will be useful to provide the information on a specimen months after it was obtained and your memory has clouded.

Labels can be as simple as a sheet of notebook paper or index card or as expensive and ornate as custom-made parchment. The idea is to transmit as much information as possible.

When dealing with objects that have a story, there is a better way to transmit information. Unless the object *must* remain pristine, ideally one should enter a catalogue number (either using a standard nomenclature or with a personal method) onto the object itself. With most fossils this is not a problem unless the specimen is extremely small. The catalogue will be the most important part of a collection. In time, its monetary or scientific value could exceed that of the collection itself!

An important collection housed at the Museum of History and Science is the minerals of Gerard Troost (1776-1850). (Fossil collectors, forgive me, but I must discuss a mineral collection to illustrate the most important point.) His collection began in 1811 (less than a year after he emigrated to the United States) and continued at least through 1849. At the beginning of June, 1986, we obtained on permanent loan from the Louisville Free Public Library, the *original* two volume Troost catalogues (in Troost's own handwritting). We had been using a typewritten copy, riddled with typograhpic errors.

We now know several things that apparently no one knew (except Troost himself)--his catalogue numbers 13,582 specimens, but in reality, it is nearly 1,000 specimens less. There is a gap between 5,313 and 6,000 (the end of volume one and the beginning of volume two). There are repeated small gaps of minerals Troost had put in his catalogue, but never obtained. Troost's catalogue (volume two) follows the mineralogy of the second edition of Dana's *System of Mineralogy*. There would be a mineral name, beneath a number with a blank space--an entry awaiting to be filled. A peculiar method of cataloging to say the least! Troost was optimistic that he could obtain practically every species of mineral known in his day, and he came very close to meeting this goal!

Troost also had a large colelction of fossils (2,000-3,000 speciemns). Unfortunately, his fossil collection has been dispersed (the Museum has several specimens, other specimens are in the U.S. National Museum), but his catalogue is missing. I know his fossil collection had a catalogue because I have found fossils with his catalogue numbers on the back.

Labels need not carry the same information that the catalogue does. Troost's labels were often slightly different. The label of specimen number 10,241 reads, "Red oxide of Iron assuming the form of the metastatique of Hauy--Iserlohn." The catalogue entry reads, "...psuedomorphous in the form of the metastatique of Calcareous Spar Hauy--Sundwig near Iserlohn." For someone studying the specimen and its historical significance, the difference is considerable. While both intried indicate red oxide of iron (today known as hematite), the "metastatique of Hauy" versus the metastatique of Calcareous Spar Hauy" may have substantially different meanings. (Hauy means Abbe' Hauy, Troost's teacher and the "father of crystallography.")

Another comparison: Troost's specimen label 4605 reads, "Earthy White Lead, Mine la Motte, 2 miles from St. Michel, Madison C., Missoury." Entry 4605 reads, "Indurated earthy carbonate of lead of a redish brown, some what resinous, fractured, interspersed with sulphuret of lead on a gray earthy carbonate of lead, forming together a vein of one and two inches thick. The brown variety is covered with argillaceous oxide of Iron--Mine la Motte--2 miles from St. Michell, Madison Ct, Missoury." In the preceding description, Troost used a comma only once. (Today a similar label would read: Cerrusite with Galena and Limonite.) The difference between the label and catalogue entries are blatant and need not be further highlighted.

Reading through the catalogue, one gets an idea how the English language was written during the early 1800's. Troost was a learned man in several languages (Dutch was his native language). One can learn sentence structure and spelling of that time period by someone who would use "proper" English of that era. Imagine the information one could glean from your labels and catalogue a hundred and fifty years from now! Whether this concerns fossils or minerals is not important, just *doing it* is!

Labelling is best done in consistent manner, that is why many collectors have labels printed especially for their collections. This writer has seen no fewer than *six* different labels for the Troost minerals. They include: (1) the original label in Troost's own handwriting, (2)/(3) two different "Polytechnic Society" handwritten labels, (4) a cardboard printed "Polytechnic Society" label, (5) handwritten label, (6) printed label on cardboard. The Polytechnic Society labels were written in the 1870's or 1880's. Those (5) and (6) are post-1937 flood. Very rarely, we find labels that pre-date the handwritten labels of Troost. They are frequently in German. Troost purchased several collections from a "Baron von Turk, of Potsdam, Prussia," so German labels are not totally unexpected. I wish we had more of those labels!

Will labels in your collection be worth something? Assuming they last longer than you do, certainly someone somewhere, at sometime will look them over. They might wonder what ever became of the collection (unless donated to a museum, most do not survive long after the collector dies). A museum is more likely to keep intact a collection that is well-documented. That includes labesl!

What deserves labelling and cataloging? What do you collect? Is it going to be worth something to you or your descendents? Is it a "curiosity" that might need explaining to someone not knowledgeable or a budding student? These are just a few good reasons to label specimens.

DO YOU CATALOGUE YOUR COLLECTION?

If you catalogue your collection, please send a brief description of the system you use to:

Alan Goldstein
Curator of Science
Museum of History & Science
727 West Main Street
Louisville, KY 40202-2681

A synopsis would be published in a future MAPS DIGEST. Cataloging collections can be as simple as a numerical system or as complicated as a series of cross-referenced labels, catalogues and books.

ILLINOIS REGULATES COLLECTING, SELLING & TRADING OF FOSSILS FROM PUBLIC LANDS

Illinois has enacted a Bill No. HB 2664 which states in part:

"6. 'Paleontological resource' means any significant fossil or material remains on public lands, including traces or impressions of animals or plants that occur as part of the geological record that are known and are included in the files maintained by the State Museum.

"10. It is unlawful to explore, excavate or collect any of the archaeological or paleontological resources protected by this Act without obtaining a permit issued by HPA [Historic Preservation Agency].

"11. It is unlawful to knowingly disturb or offer for sale or exchange any archaeological or paleontological resource protected under this Act."

Amateurs were not aware of this bill before it was passed.

AMATEURS FIND VIRTUALLY COMPLETE TYRANNOSAURUS
New York Times (Excerpts from The Cedar Rapids Gazette: Tues., Oct. 31, 1989)

The most complete skeleton of a *Tyrannosaurus rex* ever found has been uncovered in the badlands of eastern Montana.

Paleontologists expect the fossilized bones to give them a much clearer picture of the anatomy of the fierce-looking carnivore that, in the popular imagination at least, epitomizes the great dinosaurs.

Researchers at the Museum of the Rockies in Bozeman, Mont., reported that the skeleton was virtually complete, from the 5-foot-long skull and teeth the size of bananas down to the tail.

Some of the fossil parts, especially those of the arms, had never been seen before....

The first bones in the skeleton were found a year ago by Tom and Kathy Wankel, ranchers and amateur fossil hunters in eastern Montana. Erosion from rain and wind had exposed the bones.

A team from the museum began a systematic excavation this summer, uncovering the skull, backbone, pelvis and legs.

Most of the 40-foot tail remains buried, awaiting the resumption of digging next spring...

BOOK REVIEW

by N. Gary Lane
Department of Geology
Indiana University, Bloomington 47405

Case, Gerald R. 1982. A pictorial guide to fossils. Van Nostrand Reinhold Co., New York. 513 p. $32.95.

Despite the fact that this book is seven years old, it has just recently come to my attention. The book consists largely of over 1300 photographs and line drawings of fossils. The title is misleading and should say "animal fossils" as no fossil plants are included despite the fact that the dust cover says that the book covers fauna and flora. There is a brief text describing each major group and a listing of genera, including generic names of many fossils that are not illustrated. In view of the fact that these lists are not comprehensive and the fossils are not described or illustrated, it is difficult to imagine how useful such a list of names would be to the reader.

Since I am certainly not an expert on all groups of animal fossils I will restrict my detailed comments here to Chapter 4, the chapter on Echinoderms. Heavy emphasis is placed on the crinoids. There is one picture of a cystoid, five of blastoids, two of edrioasteroids, 46 of crinoids and 15 of starfish. Despite the fact that Chapter 4 is headed Echinoderms, Chapter 5 consists of the Echinoidea (five pages and 22 pictures).

The caption for each picture consists of a generic and specific name, statement of part or parts illustrated (crown, for instance), stratigraphic occurrence and geographic occurrence, as well as some indication of scale. In some cases credit is given for the photograph. Other illustration credits are listed at the end of the book, where there is also a list of publications and an index.

The identifications of the fossils are considerably more reliable than is the stratigraphic information that is given. For instance, the fossil locality at Crawfordsville, Indiana, is variously given as "Osagian Group, Kinderhook Series," which is manifestly impossible, "Keokuk Limestone," which is also impossible, "Borden group, Osagian," which is closer to the mark, and Edwardsville Formation," which is correct. All of these names apply to the same rocks at the same spot. Other mistakes include listing of the Burlington Limestone as occurring in the Chester Series (it is part of the Osagian Series), the identification of *Abrotocrinus unicus* from Missouri, where it probably does not occur, the very common mistake of mixing up crinoids from Indian Creek and Crawfordsville, Indiana, (Figure 4-35 is said to be from Crawfordsville but is actually from Indian Creek; three of the four species cited do not occur at Crawfordsville).

In summary I conclude that this book should be used with extreme caution. It includes many species that are common and easy to collect and that are available to collectors through sale or trade. But, identification of any particular specimen by use of this book, especially to the species level, is liable to result in serious error, just as is the case of identifications using Shimer and Shrock.

Please ADD the Following NEW MEMBERS to Your Directory:

Barbara J. Boddy
17120 Donahue Rd.
Pinckney, MI 48169

John D. Miles
32570 Eiffel
Warren, MI 48093
313-264-8915

High School Science Teacher. Will trade. Major interest Paleoherpetology. Has nothing for trade yet. Has a great interest in paleontology but never pursued it.

Victor & DeeAnn Porter
212 Main St.
Windfall, IN 46076
317-945-7725

Manufacturing jeweler. Will trade. Major interest badland fossils, dinosaurs and variety. Have for trade badland fossils, fossil jewelry. Want to meet people with similar interest and further their knowledge.

Doug Schermer
1008 N. Angus
Maquoketa, IA 52060

Michael D. & Barbara Sincak
Dba Treas. of the Earth Ltd
P.O. Box 384
Johnstown, PA 15907
814-535-4941

Geologist. Will trade. Major interest vertebrate & invertebrate fossils, also paleobotony. Have for trade dinosuar bone (also coprolite & other dinosaur items), trilobites, petrified wood, & various nautiloids. Want to associate with individuals who have similar interests, but primarily, share their knowledge with others and learn what they have learned.

Randy J. Wheeler
908 16th St.
Port Byron IL, 61275
309-496-9860

Homemaker. Will trade. Major interest Paleozoic invertebrates, vertebrates, and plants. Has for trade Middle Silurian Brachs & Cephalopods, Penn. invertebrates & plants. Has loved to hunt and study fossils since 6th grade and wants to share it.

Jerry & Diane Williams
4776 W 5215 S
Kearns, UT 84118

The Reverend William Mugford
1212 Streambank Drive
Mississauga, Ontario CANADA L5H 1W8

Please Note the Following CHANGES OF ADDRESS and CORRECTIONS.

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4. Echinoids.....(48)
5. The Fossil Story & WY... (48) Stone Fish (for 6th graders)

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____Separate Tapes ($20/program)
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Rock Island, IL 61201

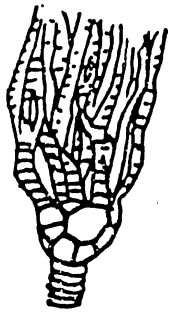
The Mid-America Paleontology Society (MAPS) was formed to promote popular interest in the subject of paleontology; to encourage the proper collecting, study, preparation, and display of fossil material; and to assist other individuals, groups, and institutions interested in the various aspects of paleontology. It is a non-profit society incorporated under the laws of the State of Iowa.

Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

Membership fee: One year from month of payment is $10.00 per household. Institution or Library fee is $25.00. Overseas fee is $10.00 with Surface Mailing of DIGESTS OR $25.00 with Air Mailing of DIGESTS.

MAPS meetings are held on the 1st Saturday of each month (2nd Saturday if inclement weather). October & May meetings are scheduled field trips. The June meeting is in conjunction with the Bedford, Indiana, Swap. A picnic is held in August. November through April meetings are scheduled for 2 p.m. in the Science Building, Augustana College, Rock Island, Illinois. One annual International Fossil Exposition is held in the Spring.

MAPS official publication, MAPS DIGEST, is published 9 months of the year--October through June.



CYATHOCRINITES

MID-AMERICA PALEONTOLOGY SOCIETY

Mrs. Sharon Sonnleitner
MAPS DIGEST Editor
4800 Sunset Dr. SW
Cedar Rapids, IA 52404

Dated Material - Meeting Notice

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